

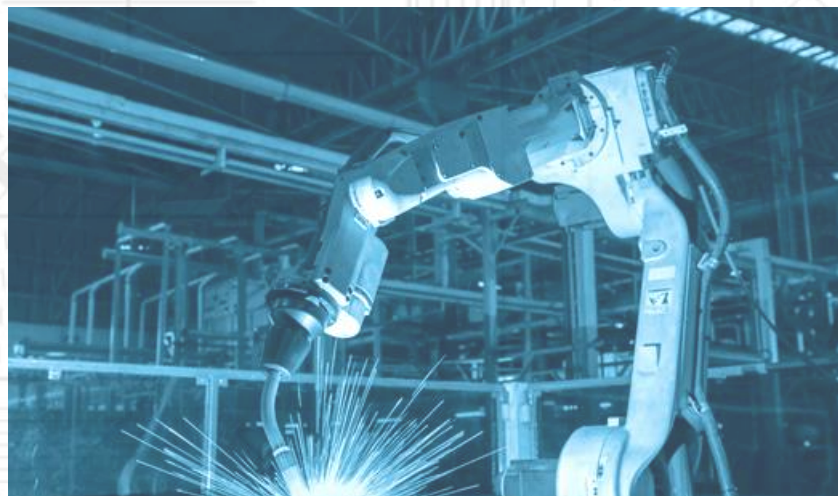


**CYPRESS**<sup>®</sup>  
EMBEDDED IN TOMORROW™

# Module Solutions

Q2 2017

## Cypress Roadmap



# Cypress Bluetooth Module Portfolio

Features

Cost	Size	XR <sup>14</sup>	XT <sup>16</sup> /XR
<p><b>CYBT-413034-01</b> <span style="color: red;">NEW</span>  <b>EZ-BT WICED BT 4.2 Dual Mode</b>                      CM4<sup>1</sup>, 1MB Flash                      IR<sup>2</sup>, SE<sup>3</sup>                      UART, SPI/I<sup>2</sup>C, PCM/I<sup>2</sup>S, SECI, GPIO                      12 x 16 x 1.80 mm SMT</p>	<p><b>CYBT-423028-01</b> <span style="color: red;">NEW</span>  <b>EZ-BT WICED BT 4.2 Dual Mode</b>                      CM4, 1MB Flash                      TRIAC<sup>11</sup>, IR, SE                      UART, SPI/I<sup>2</sup>C, PCM/I<sup>2</sup>S, SECI, GPIO                      9 x 9 x 1.80 mm SMT</p>	<p><b>CYBT-343029-01</b> <span style="color: red;">NEW</span>  <b>EZ-BT WICED BT 4.2 Dual Mode</b>                      CM3 , 352KB RAM                      512KB SFlash, HomeKit                      UART, SPI/I<sup>2</sup>C, PCM/I<sup>2</sup>S, SECI, GPIO                      12 x 15.5 x 1.95 mm SMT</p>	<p><b>CYBT-473131-01</b> <span style="color: red;">NEW</span>  <b>EZ-BT WICED BT 4.2 Dual Mode</b>                      CM4, 1MB Flash, HomeKit                      TRIAC, IR, SE, PA/LNA                      UART, SPI/I<sup>2</sup>C, PCM/I<sup>2</sup>S, SECI, GPIO                      12 x 16 x 1.80 mm SMT</p>
<p><b>CYBT-233032-11</b> <span style="color: red;">NEW</span>  <b>EZ-BT WICED BT 4.2 Dual Mode</b>                      CM3<sup>4</sup>, 256KB SFlash<sup>5</sup>                      Ext. Antenna via RF Pad                      UART, SPI/I<sup>2</sup>C, PCM/I<sup>2</sup>S, SECI, GPIO                      12 x 12 x 1.95 mm SMT</p>	<p><b>CYBLE-x140xx-0x</b>  <b>EZ-BLE BT 4.1/4.2</b>                      CM0, 128/256KB Flash                      PCB Antenna, Opamp, Comparator                      4 UDB<sup>12</sup>, 2 SCB, 25 GPIOs                      11 x 11 x 1.80 mm SMT</p>	<p><b>CYBT-343026-01</b> <span style="color: red;">NEW</span>  <b>EZ-BT WICED BT 4.2 Dual Mode</b>                      CM3, 352KB RAM                      512KB SFlash                      UART, SPI/I<sup>2</sup>C, PCM/I<sup>2</sup>S, SECI, GPIO                      12 x 15.5 x 1.95 mm SMT</p>	<p><b>CYBLE-22411x-0x</b>  <b>EZ-BLE BT 4.1/4.2</b>                      CM0, 256 KB Flash                      Chip Antenna, PA/LNA, Opamp,                      Comparator, 4 UDB, 2 SCB, 25 GPIO                      9.5 x 15.4 x 1.80 mm SMT</p>
<p><b>CYBLE-x120xx-0x</b>  <b>EZ-BLE BT 4.1/4.2</b>                      CM0<sup>6</sup>, 128/256KB Flash                      2 SCB<sup>7</sup>, 23 GPIO                      14 x 19 x 2.00 mm SMT</p>	<p><b>CYBLE-x220xx-0x</b>  <b>EZ-BLE BT 4.1/4.2</b>                      CM0, 128/256KB Flash                      2 SCB, 16 GPIOs                      10 x 10 x 1.80 mm SMT</p>	<p><b>CYBLE-212006-01</b>  <b>EZ-BLE BT 4.2</b>                      CM0, 256 KB Flash                      PCB Antenna, PA/LNA<sup>15</sup>                      2 SCB, 19 GPIO                      15 x 23 x 2.00 mm SMT</p>	
<p><b>CYBLE-013025-00</b>  <b>EZ-BLE WICED BT 4.1</b>                      CM3, 128KB SFlash                      A4WP<sup>8</sup>, IR                      UART, SPI/I<sup>2</sup>C, GPIO                      14 x 19 x 2.25 mm SMT</p>	<p><b>CYBLE-023027-00</b> <span style="color: red;">NEW</span>  <b>EZ-BLE WICED BT 4.1</b>                      CM3, 128KB SFlash                      A4WP, IR                      UART, SPI/I<sup>2</sup>C, GPIO                      10 x 10 x 1.80 mm SMT</p>	<p><b>CYBLE-202007-01</b>  <b>EZ-BLE BT 4.2</b>                      CM0, 256 KB Flash                      Ext. Antenna via u.FL, PA/LNA                      2 SCB, 19 GPIO                      15 x 23 x 2.05 mm SMT</p>	
<p><b>CYBLE-x120xx-10</b>  <b>EZ-BLE BT 4.1 (NC<sup>9</sup>)</b>                      CM0, 128/256KB Flash                      NS<sup>10</sup>                      2 SCB, 23 GPIO                      14 x 19 x 2.00 mm SMT</p>	<p><b>CYW20737S/37L</b>  <b>EZ-BLE WICED BT 4.1 (LMA<sup>13</sup>)</b>                      CM3, 64 KB EEPROM                      A4WP, IR, NFC, SE                      2 UART, 2 SPI, I<sup>2</sup>C, 17 GPIO                      6.5 x 6.5 x 1.20 mm 48 LGA</p>	<p><b>CYBLE-202013-11</b>  <b>EZ-BLE BT 4.2</b>                      CM0, 256 KB Flash                      Ext. Antenna via RF Pad, PA/LNA                      2 SCB, 19 GPIO                      15 x 23 x 1.55 mm SMT</p>	
<p><b>CYBLE-013030-00</b>  <b>EZ-BLE WICED BT 4.1</b>                      CM3, 60KB RAM                      A4WP, IR                      UART, SPI/I<sup>2</sup>C, GPIO                      14 x 19 x 2.25 mm SMT</p>	<p><b>CYW20736S/36E</b>  <b>EZ-BLE WICED BT 4.1 (LMA)</b>                      CM3, 64 KB EEPROM                      A4WP, IR                      2 UART, 2 SPI, I<sup>2</sup>C, 17 GPIO                      6.5 x 6.5 x 1.20 mm 48 LGA</p>		<p><b>EZ-BLE Standard Features:</b>                      CapSense, 1MSPS ADC, LCD Driver,                      4 TCPWM<sup>17</sup>, DAC</p> <p><b>WICED Standard Features:</b>                      Simultaneous Master/Slave,                      ADC, PWM, UART</p>

<sup>1</sup> ARM® Cortex® -M4  
<sup>2</sup> Infrared modulator  
<sup>3</sup> Security engine

<sup>4</sup> ARM® Cortex® -M3  
<sup>5</sup> Serial flash  
<sup>6</sup> ARM® Cortex® -M0

<sup>7</sup> Serial communication block  
<sup>8</sup> Alliance for Wireless Power  
<sup>9</sup> No certifications

<sup>10</sup> No Shield  
<sup>11</sup> Triode for Alternating Current  
<sup>12</sup> Universal Digital Block

<sup>13</sup> Limited modular approval  
<sup>14</sup> Extended range power  
<sup>15</sup> Power amplifier/Low-noise amplifier

<sup>16</sup> Extended temperature  
<sup>17</sup> Timer/Counter/PWM

# Cypress Standard Range BT Modules

	EZ-BLE™ Creator-Based Modules			WICED Bluetooth Modules	
Features ↑	<b>CYBLE-014008-00</b> <b>EZ-BLE Module BLE 4.1</b> 4 Opamp, 1 CMP <sup>1</sup> , 4 UDB <sup>2</sup> CM0 <sup>3</sup> , 2 SCB <sup>4</sup> , 25 GPIO 11 x 11 x 1.80 mm SMT	<b>CYBLE-214009-00</b> <b>EZ-BLE Module BLE 4.1</b> 4 Opamp, 1 CMP, 4 UDB CM0, 2 SCB, 25 GPIO 11 x 11 x 1.80 mm SMT	<b>CYBLE-214015-01</b> <span style="float: right;">Q217</span> <b>EZ-BLE Module BLE 4.2</b> 4 Opamp, 1 CMP, 4 UDB CM0, 2 SCB, 25 GPIO 11 x 11 x 1.80 mm SMT	<b>CYBT-233032-11</b> <span style="float: right;">Q317</span> <b>EZ-BT WICED BT 4.2 Dual Mode</b> CM3 <sup>10</sup> , 256KB SFlash <sup>11</sup> Ext. Antenna via RF Pad UART, SPI/I <sup>2</sup> C, PCM/I <sup>2</sup> S, SECI, GPIO 12 x 17 x 2.00 mm SMT	<b>CYBT-413034-01</b> <span style="float: right;">Q417</span> <b>EZ-BT WICED BT 4.2 Dual Mode</b> CM4 <sup>7</sup> , 1MB Flash IR <sup>8</sup> , ADC, SE <sup>9</sup> , PWM UART, SPI/I <sup>2</sup> C, PCM/I <sup>2</sup> S, SECI, GPIO 12 x 16 x 1.80 mm SMT
	<b>CYBLE-022001-00</b> <b>EZ-BLE Module BLE 4.1</b> CM0, 128KB, 2 SCB 16 GPIO 10 x 10 x 1.80 mm SMT	<b>CYBLE-222005-00</b> <b>EZ-BLE Module BLE 4.1</b> CM0, 256KB, 2 SCB 16 GPIO 10 x 10 x 1.80 mm SMT	<b>CYBLE-222014-01</b> <b>EZ-BLE Module BLE 4.2</b> CM0, 256KB, 2 SCB <sup>2</sup> 16 GPIO 10 x 10 x 1.80 mm SMT	<b>CYBT-423028-01</b> <span style="float: right;">Q417</span> <b>EZ-BT WICED BT 4.2 Dual Mode</b> CM4, 1MB Flash TRIAC <sup>12</sup> , IR, ADC, SE UART, SPI/I <sup>2</sup> C, PCM/I <sup>2</sup> S, SECI, PWM 9 x 9 x 1.80 mm SMT	
	<b>CYBLE-012011-00</b> <b>EZ-BLE Module BLE 4.1</b> CM0, 128KB, 2 SCB 23 GPIO 14 x 19 x 2.00 mm SMT	<b>CYBLE-212019-00</b> <b>EZ-BLE Module BLE 4.1</b> CM0, 256KB, 2 SCB 23 GPIO 14 x 19 x 2.00 mm SMT	<b>CYBLE-212020-01</b> <b>EZ-BLE Module BLE 4.2</b> CM0, 256KB, 2 SCB 23 GPIO 14 x 19 x 2.00 mm SMT	<b>CYBLE-013025-00</b> <span style="float: right;">Q217</span> <b>EZ-BLE WICED BT 4.1</b> CM3, 128KB SFlash A4WP <sup>13</sup> , ADC, IR UART, SPI/I <sup>2</sup> C, PWM 14 x 19 x 2.00 mm SMT	<b>CYBLE-023027-00</b> <span style="float: right;">Q217</span> <b>EZ-BLE WICED BT 4.1</b> CM3, 128KB SFlash A4WP, ADC, IR UART, SPI/I <sup>2</sup> C, PWM 10 x 10 x 1.80 mm SMT
	<b>CYBLE-012012-10</b> <b>EZ-BLE Module BLE 4.1</b> CM0, 128KB, 2 SCB 23 GPIO, NS <sup>5</sup> , NC <sup>6</sup> 14 x 19 x 2.00 mm SMT	<b>CYBLE-212023-10</b> <b>EZ-BLE Module BLE 4.1</b> CM0, 256KB, 2 SCB 23 GPIO, NS, NC 14 x 19 x 2.00 mm SMT		<b>CYW20737S/37L</b> <b>EZ-BLE WICED BT 4.1 (LMA<sup>14</sup>)</b> CM3, 64 KB E <sup>2</sup> PROM A4WP, ADC, IR, NFC, SE 2 UART, 2 SPI, I <sup>2</sup> C/PWM, 17 GPIO 6.5 x 6.5 x 1.20 mm 48 LGA	<b>CYW20736S/36E</b> <b>EZ-BLE WICED BT 4.1 (LMA)</b> CM3, 64 KB E <sup>2</sup> PROM A4WP, ADC, IR 2 UART, 2 SPI, I <sup>2</sup> C/PWM, 17 GPIO 6.5 x 6.5 x 1.20 mm 48 LGA
			<b>CYBLE-013030-00</b> <span style="float: right;">Q217</span> <b>EZ-BLE WICED BT 4.1</b> CM3, 60KB RAM A4WP <sup>7</sup> , ADC, IR UART, SPI/I <sup>2</sup> C, PWM, GPIO 14 x 19 x 2.00 mm SMT		

<sup>1</sup> Comparator

<sup>2</sup> Universal digital block

<sup>3</sup> ARM® Cortex®-M0

<sup>4</sup> Serial communication block

<sup>5</sup> No shield

<sup>6</sup> No certifications

<sup>7</sup> ARM® Cortex®-M4

<sup>8</sup> Infrared modulator

<sup>9</sup> Security engine

<sup>10</sup> ARM® Cortex®-M0

<sup>11</sup> Serial flash

<sup>12</sup> Triode for alternating current

<sup>13</sup> Alliance for Wireless Power

<sup>14</sup> Limited modular approval



# Cypress Extended Range BT Modules

Features ↑

EZ-BLE™ Creator-Based Modules	WICED Bluetooth Modules
<div data-bbox="512 525 896 682"> <p><b>CYBLE-212006-01</b> EZ-BLE BT 4.2 CM0<sup>1</sup>, 256 KB Flash PCB Antenna, PA/LNA<sup>2</sup> 2 SCB<sup>3</sup>, 19 GPIO 15 x 23 x 2.00 mm SMT</p> </div>	<div data-bbox="1717 351 2102 508"> <p><b>CYBT-473131-01</b> <span style="float: right;">Q417</span> EZ-BT WICED BT 4.2 Dual Mode CM4<sup>6</sup>, 1MB Flash, HomeKit TRIAC<sup>7</sup>, IR<sup>8</sup>, ADC, SE<sup>9</sup>, PA/LNA UART, SPI/I<sup>2</sup>C, PCM/I<sup>2</sup>S, PWM, SECI 12 x 16 x 1.80 mm SMT</p> </div>
<div data-bbox="512 699 896 856"> <p><b>CYBLE-202007-01</b> EZ-BLE BT 4.2 CM0, 256 KB Flash External Antenna via u.FL, PA/LNA 2 SCB, 19 GPIO 15 x 23 x 2.05 mm SMT</p> </div>	<div data-bbox="1717 525 2102 682"> <p><b>CYBT-343029-01</b> <span style="float: right;">Q317</span> EZ-BT WICED BT 4.2 Dual Mode CM3<sup>10</sup>, 512KB SFlash<sup>11</sup>, HomeKit UART, SPI/I<sup>2</sup>C, PCM/I<sup>2</sup>S, SECI 12 x 15.5 x 1.95 mm SMT</p> </div>
<div data-bbox="512 871 896 1028"> <p><b>CYBLE-202013-11</b> EZ-BLE BT 4.2 CM0, 256 KB Flash External Antenna via RF Pad, PA/LNA 2 SCB, 19 GPIO 15 x 23 x 1.55 mm SMT</p> </div>	<div data-bbox="1717 699 2102 856"> <p><b>CYBT-343026-01</b> <span style="float: right;">Q217</span> EZ-BT WICED BT 4.2 Dual Mode CM3, 512KB SFlash UART, SPI/I<sup>2</sup>C, PCM/I<sup>2</sup>S, SECI 12 x 15.5 x 1.95 mm SMT</p> </div>

<sup>1</sup> ARM® Cortex® -M0

<sup>2</sup> Power amplifier/Low-noise amplifier

<sup>3</sup> Serial communication block

<sup>4</sup> Comparator

<sup>5</sup> Universal digital block

<sup>6</sup> ARM® Cortex® -M4

<sup>7</sup> Triode for alternating current

<sup>8</sup> Infrared modulator

<sup>9</sup> Security engine

<sup>10</sup> ARM® Cortex® -M3

<sup>11</sup> Serial flash





# EZ-BLE CYBLE-x220xx-0x Modules

## Space-optimized Bluetooth Low Energy Modules

### Applications

Connectivity, medical, industrial, PC accessories, toys and smartphone accessories

### Features

- Qualification and Certification**  
 Bluetooth SIG QDID<sup>1</sup>, FCC, CE, KC<sup>2</sup>, MIC<sup>3</sup> and IC<sup>4</sup>
- Small Footprint**  
 10 mm x 10 mm x 1.8 mm, 21/22-pad SMT with 16 GPIO
- Bluetooth Smart Connectivity with BLE 4.1 and 4.2**  
 2.4-GHz BLE radio and baseband  
 -91 dBm Rx sensitivity, +3-dBm Tx output power
- Power Modes**  
 1.3-µA deep-sleep, 150-nA hibernate, 60-nA stop
- Highly Integrated Solution**  
 Two crystals, chip antenna, passives, shield  
 128KB and 256KB Flash sizes  
 Preprogrammed with EZ-Serial™ firmware
- CYBLE-x220xx-EVAL Evaluation Board Interface**  
 Easy interface to CY8CKIT-042-BLE Pioneer Kit  
 Enables testing of CapSense, buttons, GPIOs, OTA<sup>5</sup>

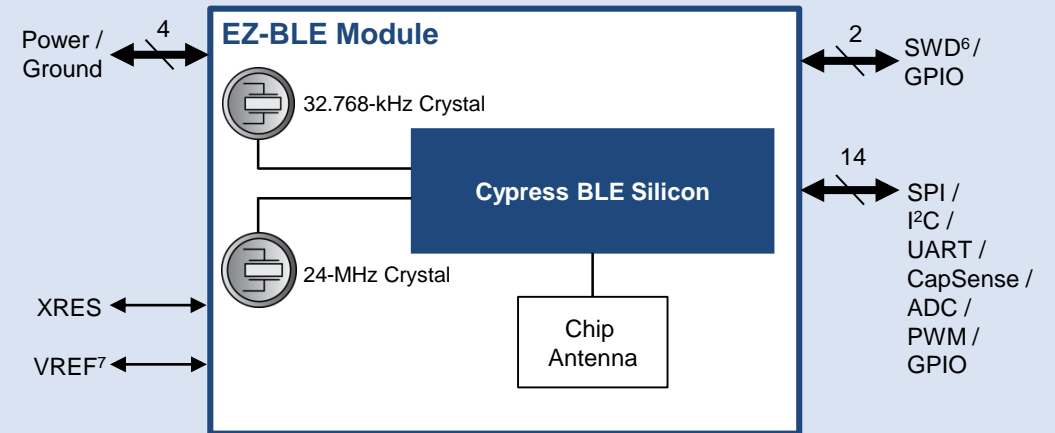
### Availability

	4.1/128KB	4.1/256KB	4.2
<b>Sampling:</b>	Now	Now	Now
<b>Production:</b>	Now	Now	Now

<sup>1</sup> Bluetooth special interest group qualification design ID  
<sup>2</sup> Korea certification  
<sup>3</sup> Ministry of Internal Affairs and Communications (Japan)

<sup>4</sup> Industry Canada  
<sup>5</sup> Over-the-air  
<sup>6</sup> Serial wire debug communication protocol

### EZ-BLE Module Family: CYBLE-x220xx-0x

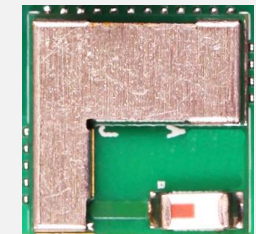


### Collateral

**Datasheet:** [CYBLE-022001-00 Datasheet](#) [CYBLE-222005-00 Datasheet](#)  
[CYBLE-222014-01 \(BT 4.2\) Datasheet](#) [BLE Silicon Datasheet](#)

#### Evaluation Kit User Guide:

- [Getting Started Application Note](#)
- [PSoC Creator](#)
- [PSoC Programmer](#)
- [CySmart<sup>8</sup> Windows Host Emulation Tool](#)
- [CySmart iOS and Android Apps](#)



<sup>7</sup> VREF only available on 256KB module  
<sup>8</sup> A GUI-based software tool that installs on your PC to test and debug BLE functionality; also available in iOS and Android mobile applications

# EZ-BLE CYBLE-x140xx-0x Modules

## Bluetooth Low Energy Module with 128KB and 256KB Flash

### Applications

Sports and fitness monitors, medical devices, wearable, electronics, home automation solutions and game controllers

### Features

- **Qualification and Certification**  
Bluetooth SIG QDID<sup>1</sup>, FCC, CE, KC<sup>2</sup>, MIC<sup>3</sup> and IC<sup>4</sup>
- **Small Footprint:** 11 mm x 11 mm x 1.8 mm, 32-SMT, 25 GPIOs
- **Bluetooth Smart Connectivity with Bluetooth 4.1 and 4.2**
- **Highly Integrated Solution**  
Two crystals, trace antenna, passives, shield  
128KB and 256KB Flash sizes, with over-the-air (OTA) firmware upgrades  
Preprogrammed with EZ-Serial firmware
- **Programmable Analog Blocks**  
Four opamps and one 12-bit, 1-Msps SAR<sup>5</sup> ADC.
- **Programmable Digital Blocks**  
Four universal digital blocks (UDBs): custom digital peripherals  
Four configurable TCPWM<sup>6</sup> blocks: 16-bit timer, counter or PWM  
Two configurable serial communication blocks for I<sup>2</sup>C / SPI / UART
- **Power Modes:** 1.3- $\mu$ A Deep Sleep, 150-nA Hibernate, 60-nA Stop
- **CYBLE-x140xx-EVAL Kit for fast evaluation and development**

### Availability

	4.1/128KB	4.1/256KB	4.2
<b>Sampling:</b>	Now	Now	Now
<b>Production:</b>	Now	Now	Q2'17

<sup>1</sup> Bluetooth Special Interest Group Qualification Design ID

<sup>2</sup> Korea Certification

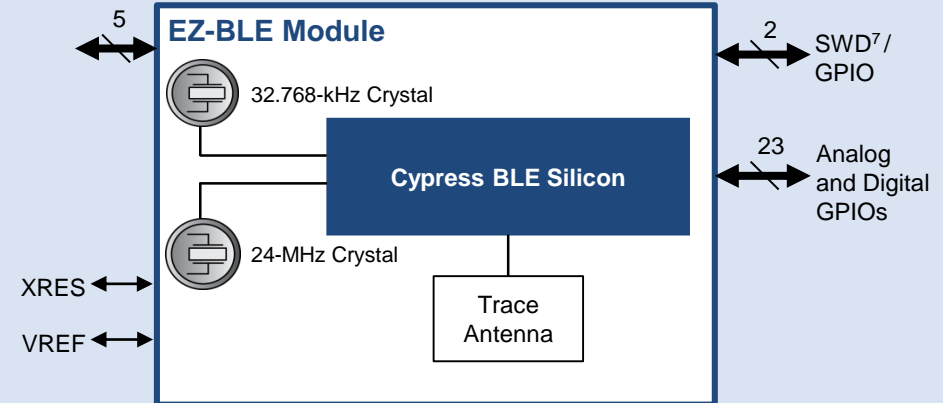
<sup>3</sup> Ministry of Internal Affairs and Communications (Japan)

<sup>4</sup> Industry Canada

<sup>5</sup> Successive approximation register

<sup>6</sup> Timer/Counter/Pulse-Width Modulator

### EZ-BLE Module Family: CYBLE-x140xx-0x



### Collateral

**Datasheet:** [CYBLE-014008-00 Datasheet](#)

[CYBLE-214009-00 Datasheet](#)

[CYBLE-214015-01 \(BT 4.2\) Datasheet](#)

[BLE Silicon Datasheet](#)

**Evaluation Kit User Guide:**

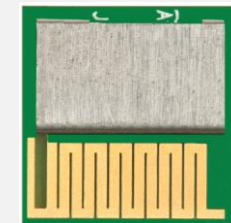
[Getting Started Application Note](#)

[PSoC Creator](#)

[PSoC Programmer](#)

[CySmart<sup>8</sup> Windows Host Emulation Tool](#)

[CySmart iOS and Android Apps](#)



<sup>7</sup> Serial wire debug communication protocol

<sup>8</sup> A GUI-based software tool that installs on your PC to test and debug BLE functionality; also available in iOS and Android mobile applications

# EZ-BLE CYBLE-x120xx-xx Modules

## Cost Optimized Bluetooth Low Energy Modules

### Applications

Connectivity, medical, industrial, PC accessories, toys and smartphone accessories

### Features

- Qualification and Certification**  
 Bluetooth SIG QDID<sup>1</sup> (CYBLE-012011-00/CYBLE-212019-00), FCC, CE, KC<sup>2</sup>, MIC<sup>3</sup> and IC<sup>4</sup>
- Small Footprint**  
 14.5 mm x 19.2 mm x 2.0 mm, 31-pad SMT with 23 GPIO
- Bluetooth Smart Connectivity with Bluetooth 4.1 and 4.2**  
 2.4-GHz BLE radio and baseband  
 -91 dBm Rx sensitivity, +3-dBm Tx output power
- Power Modes**  
 1.3-µA Deep-Sleep, 150-nA Hibernate, 60-nA Stop
- Highly Integrated Solution**  
 Two crystals, trace antenna, passives, shield<sup>5</sup>  
 Preprogrammed with EZ-Serial firmware
- CYBLE-x120xx-EVAL Adapter Board Interface**  
 Easy interface to CY8CKIT-042-BLE Pioneer Kit  
 Enables testing of CapSense, buttons, GPIOs, OTA<sup>6</sup>

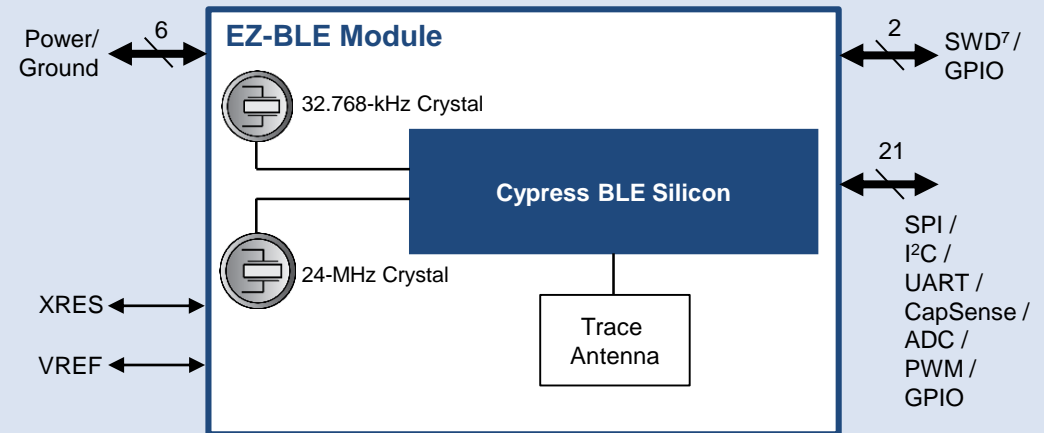
### Availability

	4.1/128KB	4.1/256KB	4.2
<b>Sampling:</b>	Now	Now	Now
<b>Production:</b>	Now	Now	Now

<sup>1</sup> Bluetooth Special Interest Group Qualification Design ID  
<sup>2</sup> Korea certification  
<sup>3</sup> Ministry of Internal Affairs and Communications (Japan)

<sup>4</sup> Industry Canada  
<sup>5</sup> CYBLE-0120012-10 does not include metal shield  
<sup>6</sup> Over-the-air

### EZ-BLE Module Family: CYBLE-x120xx-xx



### Collateral

**Datasheet:** [CYBLE-01200x-x0 Datasheet](#) [CYBLE-212019-00 Datasheet](#)  
[CYBLE-212020-01 \(BT 4.2\) Datasheet](#) [BLE Silicon Datasheet](#)

#### Evaluation Kit User Guide:

- [Getting Started Application Note](#)
- [PSoC Creator](#)
- [PSoC Programmer](#)
- [CySmart<sup>8</sup> Windows Host Emulation Tool](#)
- [CySmart iOS and Android Apps](#)



<sup>7</sup> Serial wire debug communication protocol  
<sup>8</sup> A GUI-based software tool that installs on your PC to test and debug BLE functionality; also available in iOS and Android mobile applications

# EZ-BLE XT / XR<sup>1</sup> Modules CYBLE-22411x-0x

## Long Range Bluetooth Low Energy Modules Supporting Extended Temperatures

### Applications

Connectivity, lighting, industrial and medical

### Features

- **Qualification and Certification**  
Bluetooth SIG QDID<sup>2</sup>, FCC, CE, MIC<sup>3</sup>, KC<sup>4</sup> and IC<sup>5</sup>
- **Small Footprint:** 9.5 mm x 15.4 mm x 1.8 mm, 32-pad SMT with 25 GPIOs
- **Bluetooth Smart Connectivity with Bluetooth 4.1 and 4.2**  
2.4-GHz BLE radio and baseband
- **Extended Industrial Temperature Range**  
Operating temperature range from -40°C to +105°C
- **Long Range**  
+9.5-dBm Tx output power, 400 meters line-of-sight range  
-95 dBm Rx sensitivity
- **Highly Integrated Solution**  
2 crystals, trace antenna, power amplifier, passives, shield  
Preprogrammed with EZ-Serial firmware
- **CYBLE-22411x-EVAL Adapter Board Interface**  
Easy interface to CY8CKIT-042-BLE Pioneer Kit  
Enables testing of CapSense, buttons, GPIOs, OTA<sup>6</sup>

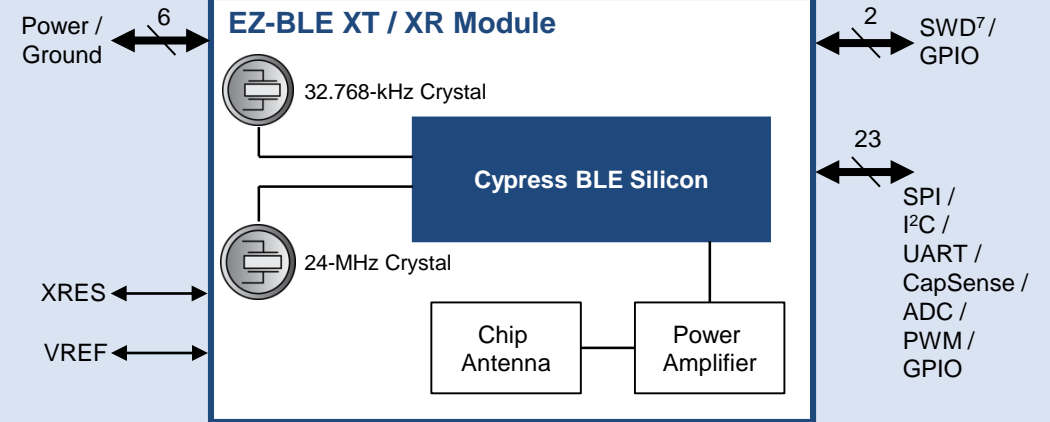
### Availability

	4.1	4.2
<b>Sampling:</b>	Now	Now
<b>Production:</b>	Now	Q2'17

<sup>1</sup> Extended temperature/extended range  
<sup>2</sup> Bluetooth Special Interest Group Qualification Design ID  
<sup>3</sup> Ministry of Internal Affairs and Communications (Japan)

<sup>4</sup> Korea Certification  
<sup>5</sup> Industry Canada  
<sup>6</sup> Over-the-Air

### EZ-BLE Module Family: CYBLE-22411x-0x



### Collateral

**Datasheet:** [CYBLE-224110-00 Datasheet](#)  
[CYBLE-224116-01 \(BT 4.2\) Datasheet](#)

[BLE Silicon Datasheet](#)

#### Evaluation Kit User Guide:

- [Getting Started Application Note](#)
- [PSoC Creator](#)
- [PSoC Programmer](#)
- [CySmart<sup>8</sup> Windows Host Emulation Tool](#)
- [CySmart iOS and Android Apps](#)



<sup>7</sup> Serial wire debug communication protocol  
<sup>8</sup> A GUI-based software tool that installs on your PC to test and debug BLE functionality; also available in iOS and Android mobile applications



# EZ-BLE XR<sup>1</sup> Modules CYBLE-2x20xx-x1

## Long Range Bluetooth Low Energy Module Supporting External Antenna

### Applications

Bluetooth Low Energy (BLE) connectivity, lighting, industrial and medical

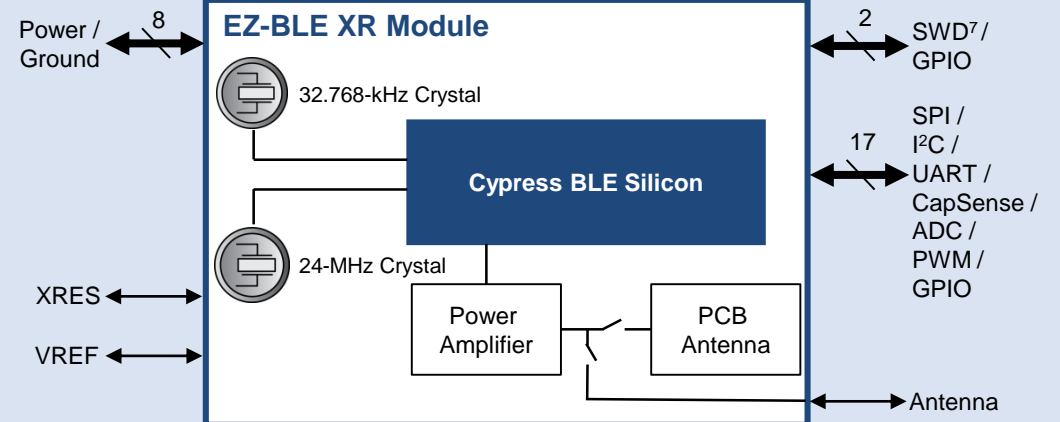
### Features

- **Qualification and Certification**  
Bluetooth SIG QDID<sup>2</sup>, FCC, CE, MIC<sup>3</sup>, KC<sup>4</sup> and IC<sup>5</sup>
- **Small Footprint:** 15.0 mm x 23.0 mm x 2.0 mm, 30-pad SMT with 19 GPIOs
- **Bluetooth Smart Connectivity with Bluetooth 4.2**  
2.4-GHz BLE radio and baseband
- **Extended Industrial Temperature Range**  
Operating temperature range from -40°C to +85°C
- **Long Range**  
+7.5-dBm Tx output power, 400 meters line-of-sight range  
-93 dBm Rx sensitivity
- **Highly Integrated Solution**  
2 crystals, trace antenna (option), power amplifier, passives  
Preprogrammed with EZ-Serial firmware
- **CYBLE-2x20xx-EVAL Adapter Board Interface**  
Easy interface to CY8CKIT-042-BLE Pioneer Kit  
Enables testing of CapSense, buttons, GPIOs, OTA<sup>6</sup>

### Availability

**Sampling:** Now  
**Production:** Now

### EZ-BLE Module Family: CYBLE-2x20xx-x1



### Collateral

**Datasheet:** [CYBLE-2x20xx-x1 \(BT 4.2\) Datasheet](#)

[BLE Silicon Datasheet](#)

**Evaluation Kit User Guide:**

[Getting Started Application Note](#)

[PSoC Creator](#)

[PSoC Programmer](#)

[CySmart<sup>8</sup> Windows Host Emulation Tool](#)

[CySmart iOS and Android Apps](#)



<sup>1</sup> Extended range

<sup>2</sup> Bluetooth Special Interest Group Qualification Design ID

<sup>3</sup> Ministry of Internal Affairs and Communications (Japan)

<sup>4</sup> Korea certification

<sup>5</sup> Industry Canada

<sup>6</sup> Over-the-air

<sup>7</sup> Serial wire debug communication protocol

<sup>8</sup> A GUI-based software tool that installs on your PC to test and debug BLE functionality; also available in iOS and Android mobile applications

# EZ-BLE WICED Modules CYBLE-0130xx-00

## Cost Optimized Bluetooth Low Energy WICED Modules

### Applications

Connectivity, medical, industrial, PC accessories, toys and smartphone accessories

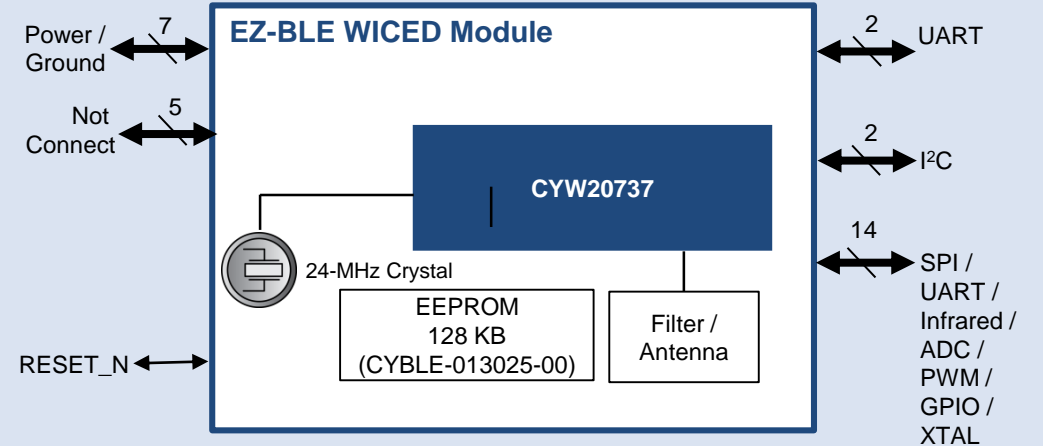
### Features

- **Qualification and Certification**  
Bluetooth SIG QDID<sup>1</sup>, FCC, CE, MIC<sup>3</sup> and IC<sup>4</sup>
- **Small Footprint**  
14.5 mm x 19.2 mm x 2.0 mm, 31-pad SMT with 23 GPIO
- **Bluetooth Smart Connectivity with Bluetooth 4.1**  
2.4-GHz BLE radio and baseband  
-93 dBm Rx sensitivity, +4-dBm Tx output power
- **Highly Integrated Solution**  
1 crystal, 128 KB flash (CYBLE-013025-00), PCB antenna, shield  
Simultaneous multiple Master and Slave (1M, 3S)  
Security Engine  
Support A4WP<sup>4</sup>, LE<sup>5</sup> Audio and OOB<sup>6</sup> pairing using NFC  
Secure over-the-air (OTA) firmware upgrade (CYBLE-013025-00)  
Preprogrammed with EZ-Serial firmware
- **CYBLE-013025-EVAL Arduino evaluation board**

### Availability

**Sampling:** Q2'17  
**Production:** Q2'17

### EZ-BLE WICED Module Family: CYBLE-0130xx-00



### Collateral

**Datasheet:** [Contact Sales](#)

[CYW20737 Datasheet](#)

**Evaluation Kit User Guide:**

[WICED SMART SDK \(Software\)](#)

[WICED SMART SDK 2.x \(Quick Start Guide\)](#)



<sup>1</sup> Bluetooth Special Interest Group Qualification Design ID

<sup>3</sup> Ministry of Internal Affairs and Communications (Japan)

<sup>4</sup> Industry Canada

<sup>5</sup> CYBLE-0120012-10 does not include metal shield

<sup>6</sup> Over-the-air

<sup>7</sup> Serial wire debug communication protocol

<sup>8</sup> A GUI-based software tool that installs on your PC to test and debug BLE functionality; also available in iOS and Android mobile applications

# CYW20737S/L

## Bluetooth Low Energy WICED SiP<sup>1</sup> Modules Supporting Security Engine and NFC<sup>2</sup>

### Applications

Connectivity, consumer electronics, industrial and medical

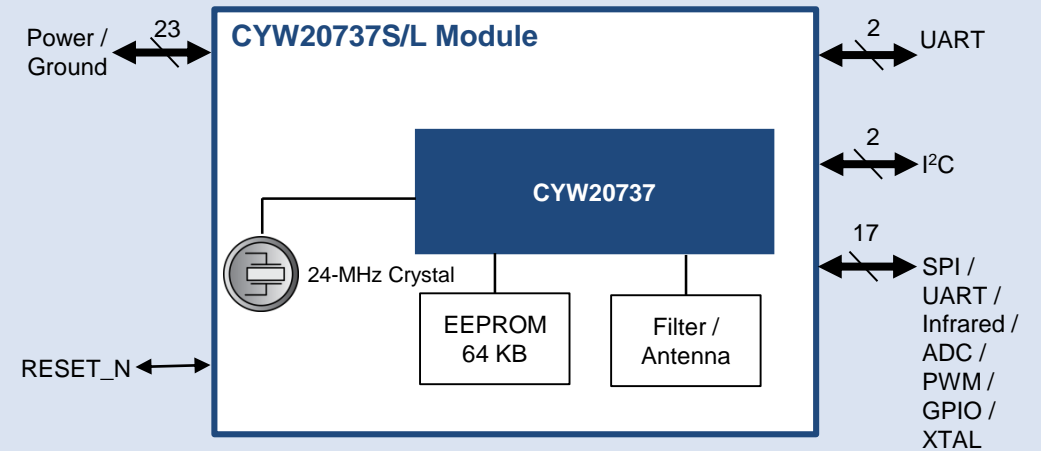
### Features

- **Qualification and Certification:** FCC, CE Compliant
- **Small Footprint**  
6.5 mm x 6.5 mm x 1.2 mm, 48-pin LGA<sup>3</sup> with 17 GPIOs
- **Bluetooth Smart Connectivity with Bluetooth 4.1**  
2.4-GHz BLE radio and baseband  
+4-dBm Tx output power, -93 dBm Rx sensitivity
- **Industrial Temperature Range**  
Operating temperature range from -40°C to +85°C
- **Highly Integrated Solution**  
1 crystal, 64 KB E<sup>2</sup>PROM, bandpass filter  
Simultaneous multiple Master and Slave (1M, 3S)  
Security Engine  
Support A4WP<sup>4</sup>, LE<sup>5</sup> Audio and OOB<sup>6</sup> pairing using NFC  
Secure over-the-air (OTA) firmware upgrade
- **CYW20737L supports 1.2-V operation with LDO bypassed**

### Availability

**Production:** Now

### WICED Module Family: CYW20737S/L



### Collateral

**Datasheet:** [CYW20737S Datasheet](#)  
[CYW20737L Datasheet](#)  
[CYW20737 Datasheet](#)

**Evaluation Kit User Guide:**  
[WICED SMART SDK \(Software\)](#)  
[WICED SMART SDK 2.x \(Quick Start Guide\)](#)

<sup>1</sup> System in package

<sup>2</sup> Near field Communication

<sup>3</sup> Land grid array

<sup>4</sup> Alliance for Wireless Power

<sup>5</sup> Low energy

<sup>6</sup> Out of band

# CYW20736S/E

## Bluetooth Low Energy WICED SiP<sup>1</sup> Modules Supporting Wireless Charging

### Applications

Connectivity, consumer electronics, beacon/tag

### Features

- **Qualification and Certification:** FCC, CE Compliant
- **Small Footprint**  
6.5 mm x 6.5 mm x 1.2 mm, 48-pin LGA<sup>2</sup> with 17 GPIOs
- **Bluetooth Smart Connectivity with Bluetooth 4.1**  
2.4-GHz BLE radio and baseband  
+4-dBm Tx output power, -93 dBm Rx sensitivity
- **Industrial Temperature Range**  
Operating temperature range from -40°C to +85°C
- **Highly Integrated Solution**  
1 crystal, 64 KB E<sup>2</sup>PROM, bandpass filter  
Simultaneous multiple Master and Slave (1M, 1S)  
Support A4WP<sup>3</sup>  
Secure over-the-air (OTA) firmware upgrade
- **CYW20736E supports external antenna through RF pad**

### Availability

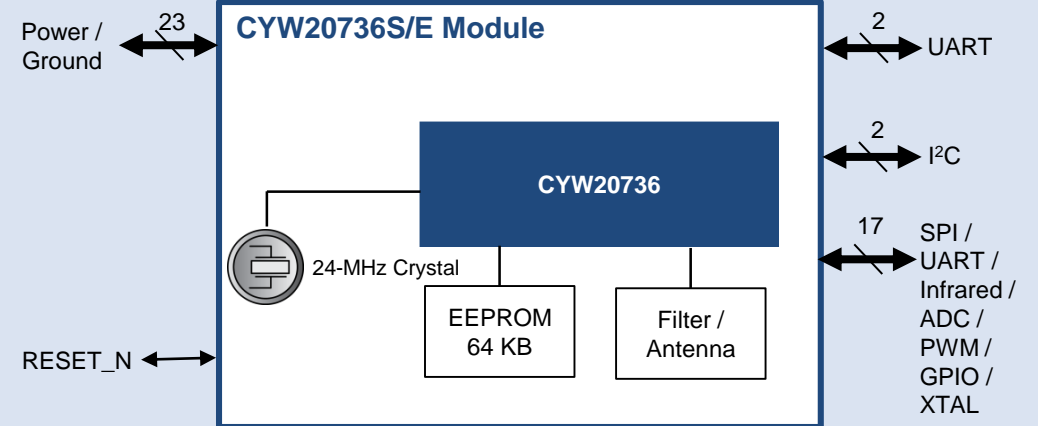
**Production:** Now

<sup>1</sup> System in package

<sup>2</sup> Land grid array

<sup>3</sup> Alliance for Wireless Power

### WICED Module Family: CYW20736S/E



### Collateral

**Datasheet:** [CYW20736S Datasheet](#)  
[CYW20736E Datasheet](#)  
[CYW20736 Datasheet](#)

**Evaluation Kit User Guide:**  
[WICED SMART SDK \(Software\)](#)  
[WICED SMART SDK 2.x \(Quick Start Guide\)](#)



# EZ BT Module Product Selector Guide

## EZ-BLE Module Part Numbering Decoder

**CY BT - X X X XX - N X**

- Bluetooth Version: 0 = Bluetooth 4.1, 1 = Bluetooth 4.2, 2 = Bluetooth 5
- Integration Type: 0 = Full Integration With Shield, 1 = No Shield
- Device Identification Number: Unique sequential product number for each module
- Temperature Range: 0 = Industrial, 1 = Extended Industrial
- EZ-BT Module Type: 3 = WICED Module
- Antenna Type:
  - 0 – No antenna, Standard range
  - 1 – PCB antenna, Standard range
  - 2 – Chip antenna, Standard range
  - 3 – No antenna, Long range (internal PA)
  - 4 – PCB antenna, Long range (internal PA)
  - 5 – Chip antenna, Long range (internal PA)
  - 6 – No antenna, Long range (external PA/LNA)
  - 7 – PCB antenna, Long range (external PA/LNA)
  - 8 – Chip antenna, Long range (external PA/LNA)
- Flash Size: 0 = 128KB, 2 = 256KB, 3 = 512KB, 4 = 1024KB
- Marketing Code: BT = Dual-mode BT/LE Product Family
- Company ID: CY = Cypress

# EZ BLE Module Product Selector Guide

## EZ-BLE Module Part Numbering Decoder

**CY BLE - X X X X X - N X**

- Bluetooth Version: 0 = Bluetooth 4.1, 1 = Bluetooth 4.2
- Integration Type: 0 = Full Integration With Shield, 1 = No Shield
- Device Identification Number: Unique sequential product number for each module
- Temperature Range: 0 = Industrial, 1 = Extended Industrial
- EZ-BLE Module Type: 2 = PSoC Module, 3 = WICED Module, 4 = PSoC Module
- Antenna Type: 0 = No Antenna, 1 = PCB Antenna, 2 = Chip Antenna
- Flash Size: 0 = 128KB, 2 = 256KB
- Marketing Code: BLE = BLE Product Family
- Company ID: CY = Cypress



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